

## Reproductive Health Disparities: Pap Knowledge and Screening Rates among Asian Pacific Islander College Women

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### Abstract

A Papanicolaou test is the most effective procedure for detecting cervical cancer. Unfortunately, many young Asian Pacific Islander (API) college women are unaware of this procedure and do not take precaution against cervical cancer. This paper reports disaggregated data on Pap knowledge and screening rates of female students at a four-year university and suggests recommendations to healthcare providers to improve Pap screening rates. Using a community-based participatory research (CBPR) approach, a cross-sectional study was administered using a web-based anonymous survey (N=618). The survey results indicated that participants who were least likely to know about Pap tests were 18-21 years old, API, uninsured, and not in a committed relationship. Slightly more than half (52%) of API females received a screening compared to 82.4% of white females. The most influential people for Pap screening were doctors (43%) and the least influential people were mothers (18.8%) and friends (7.8%). This study expands the literature on Pap knowledge and screenings among API college students and provides culturally appropriate recommendations to improve screening rates.

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### Introduction

Cervical cancer is the second most common type of cancer among women in the world (World Health Organization, 2011). In the last decade, there has been a 75% decrease in the number of deaths due to cervical cancer because of the increasing number of young women who receive Pap tests every year (U.S. Preventative Services Task Force, 2010). A Pap test is a procedure used to examine abnormal tissue growth in the cervix and is recommended 3 years after sexual debut or at 21, whichever comes first (U.S. National Cancer Institute, 2009). Though more women are receiving Pap tests today, screening rates are low, particularly among college women. This is alarming, given that 86% of college women have reported to have had sexual

intercourse (Koumans et al., 2005). Therefore, it is important to encourage young women to get screened as recommended by healthcare providers.

In the last decade, Pap screening rates have been considerably low among certain API communities (Ma, Shive, Wang, Tan, 2009; Yu, Chou, Johnson, Ward, 2009; De Alba, Ngo-Metzger, Sweningson, Hubbell, 2005). Ma et al. (2009) reported that roughly 35% of the API women of Chinese, Vietnamese, Korean, and Cambodian descent have had a Pap test. In Yu et al. (2009)'s study, whites and Hispanics have had higher screening rates. Low rates of Pap tests and knowledge among API females may be due to language barriers, lack of education, low socio-economic status, the sensitive nature of

sex-related topics, and/or lack of a strong doctor-patient relationship (De Alba et al., 2005; Ma et al., 2009; Yu et al., 2009; Burak et al., 1997).

In one study, young college female students reported inaccurate views of risks associated with sexual activities. Pap screenings were not perceived to be a priority due to a myriad of reasons, including uncertainty around the appropriate time to receive their first Pap test, lack of knowledge of preventative care, and embarrassment about discussing sexual topics with health practitioners (Burak et al., 1997).

The objectives of this paper are to report disaggregated data on Pap knowledge and Pap screening rates of participants at a four-year university; to highlight the factors that influence API women's level of Pap knowledge and screening; and to suggest recommendations to practitioners in order to improve Pap screening rates.

### Methods

A cross-sectional study was administered using a web-based anonymous survey. The survey was quantitative and descriptive. This study was conducted using a community-based participatory research (CBPR) approach. CBPR is a collaborative process that begins with a research topic of importance to the community and engages its members to combine knowledge with action to achieve social change. This study was a project of the National Asian Pacific American Women's Forum (NAPAWF), the only national multi-issue API women's organization in the country and was conducted by members of the California Young Women's Collaborative (CYWC), NAPAWF's comprehensive student-led research and activism project (Shenoy et al., 2010). The present study sought to examine college women's sexual and reproductive health behaviors. For the purpose of this paper, only Pap knowledge and screening rates will be presented.

**Table 1**

**Demographic Characteristics of Female Sample Population (N=618)**

	Frequency (N)	%
<b>Age (N=618)</b>		
18-21 years	339	54.9
22-25 years	279	45.1
<b>Nativity (N=618)</b>		
US Born	556	90.0
Born Outside US	62	10.0
<b>Student Status (N=618)</b>		
Freshman/Sophomore	151	24.5
Junior/Senior	399	64.5
Other	68	11.0
<b>Ethnicity (N=618)</b>		
White	269	43.5
Latina	163	26.4
Asian Pacific Islander	128	20.7
Other*	58	9.40
<b>Sexual Orientation (N=618)</b>		
Heterosexual	568	91.9
Bi-sexual	26	4.20
Lesbian	5	0.80
Other	10	1.60
Decline to Answer	7	1.10
<b>Relationship Status (N=618)</b>		
Not Dating, Not Committed	108	17.5
Dating, Not Committed	99	16.0
In a Committed Relationship	384	62.1
Other	24	3.9
<b>Health Insurance Status (N=618)</b>		
Insured	485	78.5
Uninsured	133	21.5

\*Other indicates unlisted identities or individuals with more than one ethnicity.

### Participants

Demographic variables assessed in the study include age, ethnicity, sexual orientation, relationship status, and health insurance status. An invitation was sent out via email to a random sample of 5000 females, of the following ethnic groups: white, API, Latina, and multi-racial/other. Black students were excluded from

the study due to low student enrollment. The random sampling list was obtained from the university Student Affairs Student Research Center.

### Measures

This study investigated the history of participants' Pap screening behaviors. Questions included "Have you ever had a Pap test?" and "What factors influenced you to have your most recent Pap test?" Participants were also asked if they had ever heard of a Pap test and whether they knew the primary purpose of the screening. Validated measures, obtained from previous CYWC studies, have been used. Most were single item, but one question pertaining to the reasons why students were prevented from ever getting a Pap test used a 4-point Likert scale.

### Procedure

Participants were invited via Survey Monkey to take an anonymous online questionnaire. The survey consisted of eight sections with 54 questions and took 20-25 minutes to complete. The survey was conducted at the largest campus of the California state university system for a period of eight weeks in fall semester of 2009. As an incentive, participants were included in a raffle for an iPod Touch. This study was approved by the university Institutional Review Board and respondents gave informed consent prior to participation.

### Analytic Plan

Raw data from the quantitative survey collected on the Survey Monkey website were downloaded onto an SPSS database, where it was cleaned for missing values prior to analysis. Descriptive statistics were calculated for demographic information, Pap test knowledge, Pap test screening, and the most common factors that influenced the decision to obtain a Pap test. The Pearson chi-square test was used to examine associations between demographic variables and Pap knowledge and screening. Multivariate logistic regression was conducted to examine predictive variables for levels of Pap knowledge and Pap screening rates. Significance was defined at an alpha level of .05 or less. SPSS software version 17.0 was used for all analyses (SPSS, Chicago, IL).

**Table 2**  
**Pap Knowledge and Screening Rates**  
**Demographics**

	Pap Knowledge %	Pap Screening Rates %
<b>Age</b>	P < 0.05	P < 0.001
18-21	85.5	57.8
22-25	89.1	86.6
<b>Ethnic Background</b>	P < 0.05	P < 0.05
White	93.5	82.4
API	80	52
Latina	88.3	69.8
Other+	82.5	62.1
<b>Health Insurance</b>	P < 0.001	
Uninsured	79.4	62.9
Insured	89.5	73.2
<b>Sexual Orientation</b>		
Heterosexual	88.2	71.6
Other Identities	78.9	68.4
<b>Relationship Status</b>		P < 0.001
Not Dating, Not Committed	83.8	56.6
Dating, Not Committed	87.8	69.4
In a Relationship	88.6	73.8

+Other includes unlisted identities or individuals with more than one ethnicity.

P-values are results of a chi-square test

### Results

The survey yielded a response rate of 17.5%, resulting in 875 responses. Of the 875 respondents, 618 were included in this sample analysis based on the following criteria: Self-identified ethnicity and reported having ever been sexually active.

The majority of respondents were juniors/seniors (64.5%), in the age range of 18-21 (54.9%), and

born in the United States (90%). The ethnic composition of survey participants consisted of 43.5% whites, 26.4% Latinas, and 20.7% API and 9.4% multi-racial/other. For relationship status, the majority of participants reported being in a “committed relationship” (62.4%), while 17.6% reported “not dating/not committed,” and 16.1% reported “dating/not committed”. In addition, about three-fourths of the sample reported having health insurance (Refer to Table 2). All ethnic groups reported comparable age of sexual debut (mean range of 17.22 – 17.57).

The participants were asked if they had ever heard of a Pap test and whether or not they had ever received a Pap test. Results showed that 93.5% of whites reported knowledge of the Pap test compared to 83.9% of the API females ( $P = 0.024$ ) (See Table 2).

The study also revealed that females ages 18-21 were less likely to have had a Pap test compared to females ages 22-25. Slightly more than half (52%) of API females had a screening compared to 82.4% of white females ( $P < 0.001$ ) (Table 2). Doctors had the most influence (43%) for receipt of a Pap test; other influences included own health concern (36.2%) and birth control related appointment (29.8%). The least influential people for Pap screening were mothers (18.8%) and friends (7.8%). In a multivariate regression analysis, participants who had health insurance were more than two times to have knowledge of Pap tests than participants who were uninsured ( $OR = 2.286$ ,  $95\%CI = 1.3, 3.9$ ,  $P = 0.003$ ). Participants between ages 22-25 ( $OR = 4.932$ ,  $95\%CI = 3.2, 7.5$ ,  $P < 0.000$ ) who reported having health insurance ( $OR = 1.982$ ,  $95\%CI = 1.2, 3.1$ ,  $P = 0.003$ ) had significant values associated with a history of Pap screening.

## Discussion

Consistent with previous studies, APIs had the lowest reported knowledge about Pap screenings (Yu et al., 2009). The study showed that the participants who were least likely to know about Pap tests were 18-21 years old, API, uninsured,

identified as non-heterosexual, and “not dating/not committed.” Tailored education and health promotion efforts can be directed towards individuals belonging to these demographic groups who may be underserved.

Factors that may explain why API college students are least likely to know about a routine medical checkup, such as a Pap test, include cultural stigma and lack of health insurance. Cultural stigmas that are tied to reproductive health issues should not be overlooked because many APIs do not openly discuss reproductive health concerns with family. Our data suggest that participants with health insurance tend to have higher knowledge about the Pap test. This may be because they are more likely to visit with their healthcare providers and have discussions about reproductive health issues and various preventative screenings. Relationship status is also a factor in knowing about Pap tests because individuals in committed relationships may be more likely to have discussions about reproductive health.

Results revealed differences in Pap screening rates with regards to age, ethnicity, and relationship status. Females ages 22-25 reported higher screening rates compared to their 18-21 year old counterparts (86.6% vs. 57.8%, respectively;  $P = 0.483$ ). Younger females in this sample may not be aware of reproductive health services associated with being sexually active, including Pap screening, or may be uncertain about when to access screening. API females ranked lowest in getting a Pap screening at 52.8% in comparison to whites who reported the highest rates (82.4%), followed by Latinas (69.8%). These findings are consistent with other similar studies of college students (De Alba et al., 2005; Burak et al., 1997). There appears to be an association with health insurance status and Pap screening rates, such that students who reported being insured received a Pap screening at a higher level than their counterparts who are uninsured (73.2% vs. 62.9%), respectively ( $P = 0.123$ ). Relationship status also had an influence on Pap screening. Those who are in committed relationships are

more likely to influence each other's sexual health behaviors such as using contraception and learning about sexual preventive healthcare.

In this study, doctors (43.9%) were found to be the most influential people in determining the most recent Pap test for API students. This could be attributed to the perceived hierarchy of power many API cultures value. Doctors are well-respected among the API community, which may be a possible reason they were found to be the most influential. Surprisingly, mothers and friends were found to be the least influential people. These findings contradict the notion that close mother-daughter relationships play an integral part in decision making concerning sexual health practices. It is intuitive to assume that females will seek information and counsel from friends; however, our findings suggest they actually have little influence. An area of future study should further examine ways in which mothers and friends can play a more definitive role in influencing sexual health behaviors.

Several recommendations can be made based on this study. Since doctors were found to be the most influential people in the most recent Pap test, healthcare providers should be trained about cultural nuances, specifically among API cultures. Discussions about Pap tests, among other sexual health topics, could be an area to which healthcare providers bring attention during routine checkups. The results of this study found APIs to have the least amount of knowledge regarding the purpose of a Pap test. University classrooms are an ideal place in which to address the knowledge gap. For instance, ethnic studies departments like Asian American Studies can better incorporate information about ethnic disparities in knowledge about sexual health within the curricula. Additionally, the utilization of social media may be another way of reaching out to college students. Websites including Facebook, YouTube, and Twitter have been growing in popularity and could be effective in publicizing such information.

### **Limitations**

There are limitations on the scope and scale of

the original research conducted. In this study, the research was conducted at only one university and therefore may not apply to the broader college population. The research was conducted in California and therefore may not reflect attitudes and screening results in other states. Our response rate of 17.5% was lower than what is generally expected from online surveys (20%-25%). The low response rate may be attributed to students being out of town for the semester break, or students being wary of academic related subjects. Furthermore, reliance on the online administration of the survey is another limiting factor. Survey respondents may not have had adequate access to the internet. For families who share a computer, it may be difficult to answer questions in private about a sensitive topic like sexual health. Despite some limitations, this is one of the few studies to address health disparities among API college females ages 18-25 and contribute to the literature of reproductive health. Another strength was the philosophy behind CBPR. From survey design to interpretation of findings, CYWC students' participation in the research continuum equipped students with the necessary skill-sets to engage community members and promote social change. Students were proactive in disseminating survey results to the campus population and communities.

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## References

- Burak, L. J. & Meyer, M. (1997). Using the Health Belief Model to examine and predict college women's cervical cancer screening beliefs and behavior. *Health Care for Women International*, 18(3), 251.
- Canales, M. K., Carr, J., & Wohlberg, J. (2005). "It's about time": college women's perceptions of gynecologic health. *Journal of the American Academy of Nurse Practitioners*, 17(6), 225-233.
- De Alba, I., Ngo-Metzger, Q., Sweningson, J. M., & Hubbell, F. A. (2005). Pap smear use in California: Are we closing the racial/ethnic gap? *Preventive Medicine*, 40, 747-755.
- Koumans, E. H., Sternberg, M. R., Motamed, C., Kohl, K., Schillinger, J. A., & Markowitz, L. E. (2005). Sexually transmitted disease services at U.S. colleges and universities. *Journal American College Health*, 53, 211-217.
- Ma, G. X., Shive, S. E., Wang, M. Q., & Tan, Y. (2009). Cancer screening behaviors and barriers in Asian Americans. *American Journal of Health Behavior*, 33(6), 650-660.
- National Cancer Institute (2009). Pap test fact sheet. Retrieved July 7, 2010, Retrieved <http://www.cancer.gov/cancertopics/factsheet/Detection/Pap-test>.
- SPSS for Windows, Version 17.0. Chicago: SPSS Inc.
- U.S. Preventative Services Task Force (2010). Screening for cervical cancer. Retrieved July 1, 2010, from <http://www.ahrq.gov/clinic/uspstf/uspscerv.htm>.
- World Health Organization, 2010. Human papillomavirus infection and cervical cancer fact sheet. Accessed from [http://www.who.int/vaccine\\_research/diseases/hpv/en/](http://www.who.int/vaccine_research/diseases/hpv/en/) on Sept. 1, 2010.
- Yu, T. C., Chou, C. F., Johnson, P. J., & Ward, A. (2009). Persistent disparities in Pap test use: Assessments and predictions for Asian women in the U.S., 1982-2010. *Journal Immigrant Minority Health*, 12(4), 445-453.

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